

WHAT IS CLAIMED IS:

1. A method of "on-the-fly" alignment of a wheel hub mounted brake lathe for machining a disc brake rotor on a vehicle, comprising:

5 (a) mounting the brake lathe on a wheel hub of the vehicle;

(b) rotating the wheel hub and the disc brake rotor by driving the wheel hub with the brake lathe; and

10 (c) while the wheel hub and disc brake rotor are rotating, manually adjusting an alignment of the brake lathe relative to the wheel hub and the disc brake rotor.

2. The method of claim 1, wherein:

15 step (c) includes manually operating two independent hydraulic pumps.

3. The method of claim 2, further comprising:

(d) machining the disc brake rotor;

20 after step (c) and during step (d), allowing the pumps to rotate with the wheel hub and the disc brake rotor to reduce hydraulic fluid loss from the pumps.

4. The method of claim 1, wherein:

step (c) is performed at a speed independent of

a rotational speed of the wheel hub.

5. The method of claim 1, wherein:

step (c) includes adjusting a position of two points of a three-point support system between the wheel hub and the brake lathe.

6. A method of "on-the-fly" alignment of a wheel hub mounted brake lathe for machining a disc brake rotor on a vehicle, comprising:

(a) mounting the brake lathe on a wheel hub of the vehicle;

(b) providing a hydraulically actuated alignment mechanism between the brake lathe and the wheel hub;

(c) driving the wheel hub to rotate the wheel hub and the brake rotor while holding the brake lathe stationary;

(d) during step (c), hydraulically adjusting the alignment of the brake lathe relative to the brake rotor; and

(e) after step (d), cutting the brake rotor with the brake lathe.

7. The method of claim 6, wherein:

step (d) includes manually actuating at least one hydraulic pump.

8. The method of claim 6, wherein:

step (d) includes adjusting a position of two points of a three-point support system.

9. The method of claim 8, wherein:

5        step (d) includes moving two hydraulic support pistons.